Patent Claims

1. Liquid-crystalline compounds of the formula I

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$$R^{1}-(A^{1}-Z^{1})_{a}$$
 $(Z^{2}-A^{2})_{b}$ $-CF_{2}O-(A^{3}-Z^{3})_{c}$ $-A^{4}-R^{2}$ I

in which

 R^1 and R^2

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each, independently of one another, denote H, halogen, a halogenated or unsubstituted alkyl or alkoxy radical having 1 to 15 C atoms, where, in addition, one or more CH₂ groups in these radicals may each, independently of one another, be replaced by -C≡C-, -CH=CH-, -O-, -CO-O- or -O-CO- in such a way that O atoms are not linked directly to one another, where one of the radicals R¹ and R² may alternatively denote CN, OCN, SCN, NCS or SF₅,

20 A^1, A^2, A^3 and A^4

each, independently of one another, denote

Z¹, Z² and Z³ each, independently of one another, denote -CO-O-, -O-CO-, -CF₂O-, -OCF₂-, -CH₂O-, -OCH₂-, -CH₂CH₂-,

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-(CH₂)₄-, -C₂F₄-, -CH₂CF₂-, -CF₂CH₂-, -CF=CF-, -CH=CH-, -C
$$\equiv$$
C- or a single bond, and

- a, b and c each, independently of one another, denote 0, 1, 2 or 3, where $a + b + c \le 3$.
 - 2. Liquid-crystalline compounds of the formula IA

10 R^1 H A CF_2O O A A

in which

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 R¹, R², a, b, c and have the meanings indicated in Claim 1, where a + b = 1 or 2, and
 - L¹ and L² each, independently of one another, denote H or F.
 - 3. Liquid-crystalline compounds according to Claim 1 or 2, characterised in that a = 1 and b = 0 or a = 0 and b = 1.
- 4. Liquid-crystalline compounds according to Claim 2, characterised in that L¹ denotes fluorine and L² denotes fluorine or hydrogen.
 - 5. Liquid-crystalline compounds according to Claim 2, characterised in that L¹ and L² denote fluorine.
- 30 6. Liquid-crystalline compounds of the formulae I1 to I31

$$R^1$$
 O H CF_2O O X $I2$

$$R^1$$
 O H CF_2O O F X

$$R^1$$
 \longrightarrow CH_2CH_2 \longrightarrow CF_2O \longrightarrow O \longrightarrow CF_2O \longrightarrow O \longrightarrow

$$R^1$$
 CH_2CH_2 H CF_2O O X 15

$$R^1$$
 O H CF_2O O O X $I7$

$$R^1$$
 O H CF_2O O O X $I8$

$$R^1$$
 O H CF_2O O X $I10$

$$R^1$$
 O H CF_2O O O X $I11$

$$R^1$$
 O H CF_2O O F X $I12$

$$R^{1}$$
 O H $CF_{2}O$ O COO O X $I14$

$$R^{1} \longrightarrow H \longrightarrow CF_{2}O \longrightarrow O \longrightarrow K \longrightarrow I15$$

$$R^{1} \longrightarrow H \longrightarrow CF_{2}O \longrightarrow O \longrightarrow K \longrightarrow I16$$

$$R^{1} \longrightarrow H \longrightarrow CF_{2}O \longrightarrow O \longrightarrow K \longrightarrow I17$$

$$R^{1} \longrightarrow H \longrightarrow CF_{2}O \longrightarrow O \longrightarrow K \longrightarrow I18$$

$$R^{1} \longrightarrow H \longrightarrow CF_{2}O \longrightarrow O \longrightarrow K \longrightarrow I19$$

$$R^{1} \longrightarrow H \longrightarrow CF_{2}O \longrightarrow O \longrightarrow K \longrightarrow I20$$

$$R^{1} \longrightarrow H \longrightarrow CF_{2}O \longrightarrow O \longrightarrow K \longrightarrow I20$$

$$R^1$$
 \longrightarrow H \longrightarrow CF_2O \longrightarrow X $I22$

$$R^{1} \longrightarrow \begin{array}{c} O \\ H \end{array} \longrightarrow \begin{array}{c} H \\ CF_{2}O \longrightarrow \begin{array}{c} F \\ O \end{array} \longrightarrow \begin{array}{c} K \\ I24 \end{array}$$

$$R^1$$
 O
 O
 CF_2O
 O
 F
 C
 F
 F
 F
 F
 F
 F

$$R^1$$
 O
 O
 F
 O
 CF_2O
 O
 F
 F
 F
 F
 F
 F

$$R^1$$
 O O CF_2O O X 130

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in which R¹ has the meaning indicated in Claim 1 and X has the meaning of R².

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- 7. Liquid-crystalline medium comprising at least two mesogenic compounds, characterised in that it comprises at least one compound of the formula I according to Claim 1.
- 25 8. Liquid-crystalline medium according to Claim 7, characterised in that it comprises one or more compounds selected from the group consisting of the general formulae II to IX

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$$R^0$$
 H O X^0 II

$$R^{0} \xrightarrow{H} C_{2}H_{4} \xrightarrow{Q} Q \xrightarrow{Y^{3}} Y^{1}$$

$$R^{0} \xrightarrow{H} Z^{0} \xrightarrow{Q} Q \xrightarrow{Y^{1}} Y^{0}$$

$$10$$

$$R^{0} \xrightarrow{H} Z^{0} \xrightarrow{H} Q \xrightarrow{Y^{1}} Y^{1}$$

$$10$$

$$R^{0} \xrightarrow{H} Z^{0} \xrightarrow{H} Q \xrightarrow{Y^{1}} Y^{0}$$

$$20$$

$$R^{0} \xrightarrow{H} H \xrightarrow{Z^{0}} Q \xrightarrow{Y^{1}} X^{0}$$

$$21$$

$$22$$

$$25$$

$$R^{0} \xrightarrow{H} H \xrightarrow{Q} Q \xrightarrow{Y^{1}} X^{0}$$

$$25$$

$$R^{0} \xrightarrow{H} Q \xrightarrow{Y^{1}} Q \xrightarrow{Y^{1}} X^{0}$$

$$25$$

$$11$$

$$11$$

$$12$$

$$13$$

$$14$$

$$15$$

$$15$$

$$15$$

$$17$$

$$17$$

$$18$$

$$18$$

$$18$$

in which

denotes n-alkyl, oxaalkyl, fluoroalkyl, alkenyloxy or R٥ alkenyl, each having up to 9 C atoms, 5 denotes F, CI, halogenated alkyl, halogenated alkenyl, Χo halogenated alkenyloxy or halogenated alkoxy having up to 7 C atoms, 10 Z^0 denotes -CH=CH-, -C₂H₄-, -(CH₂)₄-, -C₂F₄-, -CH₂O-, -OCH₂-, -CF=CF-, -CF₂O-, -OCF₂- or -COO-, Y1, Y2, Y³ and Y⁴ each, independently of one another, denote H or F, and 15 is 0 or 1.

- 9. Use of the liquid-crystalline medium according to Claim 7 or 8 for electro-optical purposes.
- 20 10. Electro-optical liquid-crystal display containing a liquid-crystalline medium according to Claim 7 or 8.

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